REMARKS

Claims 1-8, 12-26 and 29-41 are in the present application. Claims 1, 2, 15, 18, 20, 32, 37, 39 & 40 have been amended as indicated above for clarity and no new matter has been added.

The Office Action objection to claims 1, 2, 15, 18, 19, 20, 21, 32, 37-39, and 40 as not reciting sufficient structural relationship as related to microscope, is respectfully traversed. The claims have been amended as indicated, to add the requested structural relationships and this objection is believed met.

The Office Action rejection of claims 1, 2-8, 12-14, 15-17, 18, 19, 20, 21-26, 29-31, 32-35, 37, 38, 39 & 40 as obvious under 35 USC 103 a) as unpatentable over the Leith patent,' 655 in view of the Kallet patent,'147, is respectfully traversed.

As pointed out by Leith, in column 1, line 7 et seq., his invention concerns method and apparatus for producing images without lenses. That is, he is principally concerned with omitting lenses, not correcting for them.

Further, Leith does not expressly teach correcting an objective and neither patent suggests holographically correcting a microscope.

In addition, there is a further flaw with respect to the Leith apparatus, as illustrated in Figures 27 & 28 of Leith which are discussed at length by the above Office Action. As noted by the Office Action, Leith teaches that the preferred coherent light source is a laser light source in his column 2, lines 19-20. But use of such *coherent* light is clarified in his Figure 27 as being employed for writing a hologram or phase plate, 213. However, for playback or viewing an object 219 in Figure 28, the use of *non-coherent* light is clearly taught which would result a blurred image in a microscope, as described in a Rule 132 Declaration, enclosed herewith.

Note that applicants above claims as amended, e.g., claim 2 f), recite illuminating an article or object with a laser beam *of the same wavelength as the other laser beams...* to provide a clear microscope image which is believed to clearly distinguish applicant's claimed image corrector or microscope, from Leith's blurred image retriever (with object illuminated by non-coherent light), per his Figure 28, as discussed above.

This means that the Leith patent does not suggest the correct structure for a

microscope, per applicant's claims 1 et seq; nor does combining Leith with the Kallet patent correct the Leith illumination defect and this rejection is believed met, as applied to applicant's claims 1 et seq, listed above.

In addition, while Leith teaches a lens or a system, he doesn't teach what lenses, i.e., doesn't teach use of an objective lens nor the combination of an objective lens & an imaging lens in a microscope. These two lenses are not suggested by Leith without resort to applicant's own disclosure, which is hindsight reconstruction that does not establish obviousness.

For the Office Action to say that lenses 247 & 249 "could be" an objective & an imaging lens is speculation based on applicant's disclosure and is far from an "explicit" demonstration of such lenses from the Leith patent.

Also note that applicant's claims, claims 1-14, 19, 21-26, 29-31 & 38 recite an image corrector" that comprises a microscope that has certain elements. As "microscope" is outside the preamble, it is a valid claim limitation that must be addressed on the merits. That is, the structure defined in claim 1, is limited to a microscope, which is further limited by features a)-f), which structure is not suggested by the Leith & Kallet patents and this rejection is believed met.

The Office Action makes much of certain claims, stating that a recitation as to how the claimed apparatus is intended to be used does not differentiate the claimed apparatus. Agreed. That is why applicant provides method of use claims which are not subject to structural limitations and these are claims, 15-18, 20, 32-37, 39, 40 & 41. Again, an action on the merits is requested on these novel, method of use claims, not suggested by the applied references. These include method claims 32-37, 39 & 41, which recite a new use of an array of pinholes, which lends further novelty to these claims.

The Office Action rejection of applicant's claims 21-26, 29-31 & 32-35, 37, 38 & 39, as obvious under 35 USC 103 a) in view of the above patents to Leith' 655) and to Kallet '147 and further in view of Klotz, '555, is respectfully traversed. Again the Office Action states that if Leith is not restricted to a particular optical system that is intended to be corrected, this suggests to one skilled in the art, that one may include an objective and imaging lens in a microscope. That is, if the patent doesn't negate an application or use, it is covered by such patent.

This non-negate rule, proposed by the Examiner, flies in the face of the Examiner's own MPEP at section 2143, including test 3 for obviousness, which is that the prior art reference must teach or suggests all of the claim limitations, not merely fail to negate such limitations as the Examiner would have it. Accordingly, applicant again requests a citation from the Examiner on this radical departure from the accepted rule.

For example, despite the above accepted rule, the Office Action insists, on page 7, that since the method for correcting aberrations of the optical system of the Leith patent is not restricted to a particular optical system, this is said to suggest to one skilled in the art that *Leith's optical system may include more than one lens and may include an objective and/or an imaging lens in a microscope.* But this is the Examiner's non-negate rule all over again which goes against the Examiner's own MPEP at section 2143, including test 3 for obviousness, as noted above, which does not become more valid with each repetition. It is requested that the above long-standing test 3 for obviousness be accepted unless the Examiner has a citation nullifying such test.

As noted on page 8 of the Office Action, at line 7 from the bottom, the Leith reference does not teach the use of a pinhole array in the object light path, but it is said that the Klotz reference, '555 does teach the use of a pinhole array to record a hologram with high image quality. But this is not what Klotz teaches. The Klotz apparatus, per his Figure 1, is complicated. He does not have a simple plate with pinholes in the path of a beam. Instead, he teaches a plate having apertures therein, each aperture having a pinhole diaphragm 5 therein, with a phase plate 4 coated on the upstream side of each pinhole, with the pinholes pointed at different angles (per his Figures 1 & 2 and as noted in his column 3, lines 7 et seq.) to avoid highly irregular intensity distribution of sub beams 6 on his photographic plate 10.

In addition, Klotz requires a zone plate 3 also mounted upstream of his phase plate 4, so as to divide the incoming beam 1 as it passes through lens 2 and plates 3, 4 & 5, into a plurality of sub-beams 6, to obtain not a single image on plate 10 of his Figure 1 but multiple miniature holograms, such as multiple images of masks, used in the fabrication of integrated circuits, as noted in his column 1, lines 11-17.

This teaching is quite different from applicant's array of pinholes 142 & 134, per applicant's Figure 11. That is, the Klotz structure has a relatively complex assembly of plates 3, 4 & 5, which divide a single beam 1 into multiple sub-beams 6, which are contacted by reference beam 7, to write multiple miniature holograms on plate 10.

Thus the Klotz lens system does not suggest applicant's uncomplex pinhole array, e.g., of Figure 11, which writes but one hologram 141, for playback in a wider field of view; that is, a larger image than available with a single pinhole and, of course, larger than a mosaic of multiple miniature images produced by the Klotz lens system.

That is, the Klotz lens system is greatly different from applicant's apparatus for image correction and the playback images so produced are also greatly different, as noted above and as defined in applicants claims 21 et seq.

Also, applicant, per the above claims, dispenses with the multi-plate system that encumbers the Klotz apparatus and employs a different structure for a different use with a different image result than the Klotz reference, i.e., obtains a strikingly different result, a single image of wider field of view, e.g., as indicated in Figure 11 hereof.

Thus none of the applied references singly or in combination suggest applicant's novel method and apparatus, per claims 21 et seq. of a microscope of wider field of view that has holographically corrected lenses, with playback by illumination of the article to be viewed, by a laser beam per such claims, as amended.

Note that applicant's claims have been amended to limit the scope of each to lens correction in a microscope and claims 21 et seq. are further limited by reciting an array of pinholes in such corrected microscope.

Thus, it is believed that all of applicant's claims that recite "an array of pinholes" should be seen as allowable, including claim 32, from which claim 36 depends. That is, it is noted that claim 36 is objected to as dependent upon a rejected base claim, but would be allowable if.... Hopefully, claim 36 is now dependent upon a novel base claim, as amended and need not be written in independent form. Further such array of pinholes makes possible the method of claim 36, which provides an image with a contour plot thereof.

As discussed above, none of the cited references describes holographically correcting a microscope or how to obtain a corrected or non blurred image back through

the hologram. Thus, none of the cited references teach or suggest all the limitations of applicant's above claims so as to establish obviousness *per test 3 above* and *In re Vaeck*, 20 USPQ 2nd 1438 (1991).

Again it is noted that the primary reference in the above rejection, Leith, has a notable omission in his Figure 28 in that he illuminates an object to be viewed with non coherent light through hologram 213, which means, in a microscope, a blurred image results. This defect shows that applicant's above listed claims (*both apparatus and method*) are clearly distinguished over the combined patents of Leith, Kallet & Klotz.

In answer to the "**Response to Arguments**" in the above Office Action in ¶11, the Examiner points out that applicant's claims never state whether the light for illuminating an object (on playback) is coherent on non-coherent but only recites a light beam. Point well taken. This suggestion has been heeded and you will note that the independent claims herein have been amended to recite that the illuminating of article beam is a laser beam, e.g., as indicated in claims 2 f) and 21 f), for clarity, accuracy and to avoid the blurred image problem on playback, discussed above.

The Office Action asserts, however, that no coherent beam is required to for illumination on playback. That's what Leith thought, per his Figure 28. However, in the case of a microscope at least, the rule is otherwise, as set forth in the enclosed Declaration under 37 CFR 1.132 by the applicant herein.

Finally, referring to ¶ 12 of the Office Action, it is pointed out that a "new use" of apparatus such as a holographically image corrector cannot be anticipated by a prior art structure *because* it is a method claim and not an apparatus claim. That is, such a claim is patentable, provided the new use is not an obvious method in view of the prior art structure, as indicated in the MPEP at 2112.02.

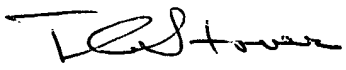
Here, applicant's claims are believed non-obvious in the claimed recitation of employing laser beam illumination for image playback, contrary to Figure 28 of the Leith patent. Also there is the novelty of the array of pinholes of applicants claims 21 et seq., which array is believed greatly different as to structure and method from the Klotz reference, singly or in combination with the Leith reference.

Thus applicant's claims, as amended, are believed to recite novel, useful and specific applications over the generalized prior art.

In view of the foregoing, the claims of record, as amended, are believed distinguished over the applied art and in condition for allowance.

In accordance with Section 714.01 of the M.P.E.P., the following information is presented in the event that a call may be deemed desirable by the Examiner to: Thomas C. Stover, (781) 377-3779.

Respectfully submitted,



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